ART 34 AMDT

CLAIMS

1. A method of producing a heating element that is comprised essentially of molybdenum silicide and alloys of this basic material, which forms aluminium oxide on its surface, c h a r a c t e r i s e d by producing a material that contains substantially $Mo(Si_{1-x}Al_x)_2$ and Al_2O_3 by mixing a mixture of a silicon and molybdenum compound with an aluminium compound; in that the silicon and molybdenum compound either include $Mo(Si_{1-y}Al_y)_2$ and are mixed with either an aluminium compound consisting of Al_2O_3 or $Al(OH)_3$ and possibly mixed with one or more of the compounds SiO_2, Si and MoO_3 or by virtue of the mixture of the silicon and molybdenum compound containing MoO_3 and Al and Si and/or SiO_2; in that the input components together have a degree of purity corresponding to at least 98%; and in that the mixture is caused to react exothermically and/or by being sintered so that exchange reactions are caused to take place, to form the compounds $Mo(Si_{1-x}Al_x)_2$ and Al_2O_3, where x is caused to lie in the range of 0.4 - 0.6.

2. A method according to Claim 1, c h a r a c t e r i s e d in that said SiO_2 is included in silicates, such as mullite and sillimanite, which do not effect the symmetry of the crystal lattice of molybdenum silicide.

3. A method according to Claim 1 or 2, c h a r a c t e r i s e d in that x is caused to lie in the range of 0.45 - 0.55.

4. A method according to Claim 1 2 or 3, c h a r a c t e r i s e d by adding one or more of the following sintering auxiliaries MgO, CaO, SiO_2 and Y_2O_3 to said mixture.

5. A method according to Claim 1 2, 3 or 4, c h a r a c t -

ART 34 AMDT

e r i s e d by substituting molybdenum partly with Re or W or Nb in the material $Mo(Si_{1-x}Al_x)_2$.

6. A method according to Claim 5, c h a r a c t e r i s e d by replacing molybdenum with W in an amount corresponding to approximately one third.

7. A method according to any one of the preceding Claims, c h a r a c t e r i s e d in that the input components have a degree of purity of at least 99%.